

Introduction To Active Server Pages+

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Agenda

- **Review of today's ASP**
- **ASP+ Pages and UI Controls**
- **Web services**
- **Application infrastructure**
 - **Deployment**
 - **Configuration**
 - **Performance and scalability**
 - **Security**
 - **HTTP handlers and modules**

ASP (The Good)

- **The leading Web development platform**
 - Nearly one million ASP developers
- **Simple and approachable development**
 - HTML with embedded script
 - No compile required - “just hit save”
- **Flexible and extensible**
 - Supports multiple languages
 - VBScript, JScript®, etc.
 - COM objects access resources, encapsulate business logic

ASP (The Bad And The Ugly)

- ASP code gets messy!
- Requires too much code
 - Have to write code to do anything
- Code intermixed with content
- Only supports script languages
- Deployment of components and configuration data is difficult
 - Locked DLL, regsvr32, IIS metabase
- Session state limited to single machine

Introducing ASP+

- **Platform for building, deploying and running Web applications**
- **Radical enhancement of today's ASP**
 - Simplified, more powerful page model
 - Compiled programming language support
 - Factored architecture
 - Simplified deployment
 - Improved performance and scalability
 - Enhanced availability
- **Fantastic Visual Studio .NET designer support**

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ Web Pages (1 Of 2)

- **ASP+ Pages simplify development**
 - Familiar event-driven programming model
 - “VB for the Web”
 - Server UI Controls encapsulate rich functionality
- **Support multiple clients automatically**
 - Rich DHTML, HTML 3.2, WML, small devices
- **Enable separation of code from content**
 - Developers and designers can work

ASP+ Web Pages (2 Of 2)

- **Support early bound, compiled languages**
 - Visual Basic .NET, C#, Managed C++, COBOL, etc.
 - Keep simple ASP-style on demand compile
- **Designed for great tools support**

Server UI Controls (1 Of 2)

- Denoted by tag with `runat=server`
 - `<asp:datalist id="Sales" runat=server />`
- Handle both rendering and interaction
 - “Render” HTML to client
 - Handle “Postbacks” directly
 - Fire events to trigger user code
- Fully declarative
 - No coding required for common

Server UI Controls (2 Of 2)

- **Support customizable look and feel**
 - **Templates enable fine grained UI control**
 - **Examples: list header, item, separator**
 - **Controls can be nested**
- **Single control can handle multiple clients/devices**
 - **Encapsulates device specific behavior**
 - **User code does not need to**

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ Web Services

- **ASP+ simplifies creating web services**
- **Simple Programming Model**
 - Author .ASMX Files with Class Methods
 - ASP+ compiles on demand, generates SDL contract, exposes HTML information page
- **Incoming HTTP Messages mapped to methods**
 - No special HTTP or XML knowledge required
- **Supports Multiple Message Wire Formats**
 - HTTP Get Requests that return XML

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ Platform

Pages

Services

**Application
Infrastructure**

ASP+ App Infrastructure

- Pages/Services share a single app model
 - Session and application state
 - Configuration and administration
 - Code deployment
 - Security model
- Factored architecture improves flexibility
 - HTTP handlers, modules for fine grained control
- Key ASP+ improvements
 - Enhanced deployment, scalability, availability

ASP+ Deployment

- **ASP+ supports “XCOPY” deployment**
 - No registration required
 - No stopping the server
- **Supports all web resources**
 - Web pages, web services
 - Compiled components (DLL)
 - Configuration metadata

Improved Code Deployment

- Simple deployment for components
 - Just xcopy/ftp to an application's "\bin" dir
 - No registration required (no more regsvr32)
- Each app is isolated from other apps
 - Components can be private to application
 - Other apps cannot load private components
 - Other apps can use different versions
- Simple uninstall — just delete files
 - No registry entries to clean up

Dynamic Code Update

- **ASP+ supports dynamic DLL updates**
 - No more locked DLLs
- **Just copy new DLL on top of old one**
 - App automatically detects changes
 - App gracefully migrates to new version
- **No tools, no app shutdown, no re-boots**

Improved Configuration

- ASP+ provides extensible configuration
 - Hierarchically apply config settings to application
- Configuration data stored in XML text files
 - Format is human-readable and human-writable
- Config data can be stored in app directories
 - Config system automatically detects changes
- Developers can build custom config

Sample Configuration File

```
<configuration>
```

```
  <httphandlers>
```

```
    <add path="*.aspx" type="PageFactory"/>
```

```
    <add path="Default.aspx"  
type="StartPage"/>
```

```
  </httphandlers>
```

```
  <adrotator server="http://myadserver:8080">
```

```
    <randomads>
```

```
      <add src="foo.gif" id="12432342"/>
```

```
      <add src="bar.gif" id="45435353"/>
```

```
    </randomads>
```

```
  </adrotator>
```

```
</configuration>
```


Improved Scalability

- **Session state supports web farms**
 - Applications no longer tied to one machine
 - Single state server supports multiple app servers
- **Multiple Session State providers**
 - ASP+ state server
 - SQL Server
- **Better scalability on multiproc servers**
 - “Web Gardens” run app in multiple processes, each bound to a processor

Caching Support

- **Extensive caching support improves performance**
- **Full page output caching**
 - Vary by params, language, user-agent
- **Fragment Caching**
 - Enables portions of pages to be cached
- **Extensible Cache API**
 - Developers can cache arbitrary objects

ASP+ Authentication

- **Supports multiple authentication schemes**
- **Basic, Digest and NTLM leverage IIS**
 - Credential verification against NT SAM or DS
- **Passport module provided**
 - Exposes passport profile API
- **Custom, forms-based authentication**
 - Easy to use, with cookie token tracking
 - Enables custom login screen (no popup dialogs)
 - Supports custom credential checks against database, exchange, etc.

Authorization

- **ASP+ supports authorization using either users or roles**
- **Roles map users into logical groups**
 - **Example: “User”, “Manager”, “VP”, etc.**
 - **Provides nice developer/admin separation**
- **Developers can perform runtime role checks in code**
 - **`if (User.IsInRole(“Admin”) { }`**

Factored Architecture

- **ASP+ has a well-factored, layered architecture**
 - Developers can hook in at various levels
 - Replace or modify built-in functionality
- **HttpModules for intercepting requests**
 - Similar to ISAPI filter
 - Used for authentication, state, output caching
- **HttpHandlers allow low-level request handling**
 - Object implements IHttpHandler
 - Activated to handle requests
 - Replaces built-in functionality

ASP+ Improves Availability

- **ASP+ handles failures in user and system code**
- **Detects and recovers from problems**
 - **Access violations, memory leaks, deadlocks**
- **Supports pre-emptive cycling of apps**
 - **Time and request-based settings**

Summary

- **ASP+ provides a quantum leap in power, ease of use, and flexibility**
 - Great architecture for rich Web pages
 - Makes building Web services easy
- **ASP+ is a platform for innovation**
 - Factored design puts you in control
- **Scalability and availability are built in**

Related Sessions (1 Of 2)

- **Introduction to ASP+ Web Forms 1 & 2**
- **Building ASP+ Server Controls 1 & 2**
- **Building and Using ASP+ Web Services**
- **ASP+ Tips and Tricks**
- **Targeting Mobile Devices with ASP+**
- **ASP+ Performance and Caching**
- **ASP+ HTTP Runtime**
- **Building Off-line and Client Applications with ASP+**

Related Sessions (2 Of 2)

- **ASP to ASP+ Migration**
- **ASP+ Security**
- **Leveraging Internet Explorer 5.5 from ASP+ Server Controls**
- **Building Localized Applications for the Web Services Platform, Part 2: ASP+**
- **Using Data and XML in Active Server Pages**

Where do **you** want to go today?

Microsoft